

Remarks

Claims 1-42 are pending in the application, with claims 1, 9, 15, 20, 23, 32, and 38 being the independent claims. Claims 1, 3, 4, 6, 9, 10, 14, 15, 20, 26, 29, 34, and 41 are sought to be amended to further clarify the Applicants' techniques. Support for the amendments is found in the specification at least at, for example, paragraphs 0008, 0024, 0029, 0030, 0034, 0041-0043, 0051, 0054, and 0061, and Figs. 3, 4A, 4B, 7, and 8 of Applicants' specification. Claims 4, 8, 13, 22, 25, 31, 33, 35-37, 39, and 42 are sought to be canceled without prejudice to or disclaimer of the subject matter therein.

These amendments are believed to introduce no new matter, and their entry is respectfully requested.

The Examiner is thanked for the indication on page 10 of the Office Action of allowable subject matter found in claims 31, 35-37, and 42. Claims 31, 35, and 42 have been rewritten in independent form as new claims 43, 44, and 47, respectively. Claims 36 and 37 have been rewritten as claims 45 and 46 which depend on new, independent claim 44.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Rejections under 35 U.S.C. § 112, first paragraph

On page 2 in paragraph 1 of the Office Action of the Office Action, Claim 20 is rejected under 35 U.S.C. § 112, first paragraph as lacking an enabling disclosure

commensurate with the scope of the claim. The Examiner states that claim 20 is rejected under 35 U.S.C. § 112, first paragraph, as allegedly being unduly broad in light of the specification. The Examiner states that claim 20 recites a means that does not appear in combination with another recited element of means. Claims 21 and 22 are rejected under 35 U.S.C. § 112, first paragraph, as applied to claim 20. Applicants respectfully traverse these rejections and request that these rejections be withdrawn and the claims be passed to allowance.

Although Applicants believe claims 20-22 are in compliance with 35 U.S.C. § 112 as currently pending in the application, Applicants have amended claim 20 in order to expedite prosecution. Applicants have amended claim 20 to recite an a system for processing image data representing biometric data, wherein the system comprises a conversion module configured to convert image data captured in a first, polar coordinate system to converted image data in a second coordinate system. Support for the amendment to claim 20 is found in the instant specification at, for example, paragraphs 0014 and 0037 and in Figs. 1 and 4. In view of the present amendment, claim 20 is now in compliance with 35 U.S.C. § 112. Based on their respective dependencies to amended claim 20, claims 21 and 22 should also be found allowable.

Rejections under 35 U.S.C. § 112, second paragraph

On page 2 in paragraph 3 of the Office Action Claim 29 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. Based

on the following remarks and amendments, Applicants respectfully traverse this rejection.

On page 2 in paragraph 3 of the Office Action, the Examiner states that there is an insufficient antecedent basis for “the interpolation method” limitation recited in claim 29. Claim 29 has been amended to recite the method of claim 27, wherein one of the at least one conversion parameter includes a parameter indicating an interpolation method to be used during conversion. Support for this amendment is found in the instant specification at least at, for example, in Fig. 6 and paragraphs 0055-0057 and 0059. In view of the present amendment, Applicants submit that claim 29 is now in compliance with 35 U.S.C. § 112.

Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw this rejection.

Rejections under 35 U.S.C. § 102

On page 3 in paragraph 6 of the Office Action, claims 1, 20, 23, 26, 32, and 38 were rejected as being allegedly anticipated by U.S. Patent No. 6,094,499 to Nakajima, et al (“Nakajima”). This rejection is traversed for the following reasons.

Anticipation under 35 U.S.C. § 102 requires showing the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. See *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 U.S.P.Q. 481, 485 (Fed. Cir. 1984).

Claims 1-8

Independent claim 1 recites features that distinguish it from the applied reference.

For example, claim 1 as amended herein recites a system for processing image data representing biometric data, the system comprising: a receiving module for receiving image data captured in a first, polar coordinate system; and a coordinate conversion module coupled to the receiving module for converting the image data captured in the first coordinate system to converted image data in a second coordinate system.

While Nakajima may disclose registration (storing) and subsequent collation (matching) of a single fingerprint scanned on a standard prism (Nakajima, col. 14, ln. 64-col. 15, ln. 18, FIG. 2), Nakajima does not teach that image data is captured in a *polar* coordinate system and subsequently converted into a second coordinate system, as recited in claim 1. Although Nakajima may disclose initial capture (registration) of Fourier image data in a *Cartesian* coordinate system (Nakajima, col. 18, lns. 41-45), Nakajima does not teach or suggest that a coordinate conversion module is coupled to a receiving module for converting image data *captured in a polar coordinate system* to converted image data in a second coordinate system, as recited in claim 1. While Nakajima may disclose conversion of Fourier image data *into* a polar coordinate system (Nakajima, col. 4, lns. 51-55, col. 5, lns. 30-35) and performing a two-dimensional Fourier transform for collation of fingerprint image data (Nakajima, col. 18, lns. 46-54, FIG. 16), Nakajima does not suggest that fingerprint image data is initially captured in a polar coordinate system and subsequently converted into a second coordinate system, as recited in claim 1. Applicants are unable to identify in Nakajima claim 1's recited feature of a coordinate conversion module coupled to a receiving module that captures image

data in a polar coordinate system. While Nakajima's system may include a fingerprint sensor coupled to an LCD display (Nakajima, FIG. 2), Nakajima lacks a coordinate conversion module coupled to a receiving module, wherein the coordinate conversion module converts image data captured in a polar coordinate system to converted image data in a second coordinate system, as recited in claim 1.

Dependent claims 2-8, which depend upon independent claim 1, are allowable for at least being dependent from allowable independent claim 1, in addition to their own respective distinguishing features. See *In Re Fine*, 837 F.2d 1071 (Fed. Cir. 1988) and M.P.E.P. § 2143.03. Accordingly, Applicants respectfully request that the rejections of claims 1-8 be removed and that these claims be passed to allowance.

Claims 20-22

Independent claim 20 recites features that distinguish it from the applied reference. For example, claim 20 as amended recites a system for processing image data representing biometric data, wherein the system comprises: a conversion module configured to convert image data captured in a first, polar coordinate system to converted image data in a second coordinate system. Although Nakajima may disclose a system that converts image data from a first Cartesian coordinate system into a second, polar coordinate system (Nakajima, col. 4, lns. 51-55, col. 5, lns. 30-35, col. 18, lns. 41-59), Nakajima does not teach or suggest a system with a conversion module that converts image data captured in a polar coordinate system into a second coordinate system, as recited in claim 20.

Dependent claims 21 and 22, which depend upon claim 20, are allowable for at least being dependent from allowable independent claim 20, in addition to their own respective distinguishing features.

Accordingly, Applicants respectfully request that the rejections of these claims be removed and that these claims be passed to allowance.

Claims 23, 24, and 26-30

Independent claim 23 recites features that distinguish it from the applied reference. For example, claim 23 as amended recites a method for processing image data representing biometric data. Claim 23 further recites that the method comprises: receiving the image data captured in a first, polar coordinate system and storing the captured image data; and converting the captured image data in the first, polar coordinate system to converted image data in a second coordinate system.

While Nakajima's system may convert image data *from a Cartesian* coordinate system *into a polar* coordinate system (Nakajima, col. 4, lns. 51-55, col. 5, lns. 30-35, col. 18, lns. 41-59), Nakajima does not teach or suggest that image data captured in a polar coordinate system is stored and then subsequently converted into a second coordinate system, as recited in claim 23.

Dependent claims 24 and 26-30, which depend upon claim 23 are allowable for at least being dependent from allowable an independent claim, in addition to their own respective distinguishing features.

Accordingly, Applicants respectfully request that the rejections of these claims be removed and that these claims be passed to allowance.

Claims 32 and 34

Claim 32 recites features that distinguish it from the applied reference. For example, claim 32 recites a method for processing image data representing biometric data in a system having a scanning and capturing system and an image conversion system. Claim 32 further recites that the method comprises: generating and storing conversion data in the image conversion system; capturing in the scanning and capturing system the image data in a first, polar coordinate system; communicating the captured first, polar coordinate system image data to the image conversion system; and converting the captured first, polar coordinate system image data to converted image data in a second coordinate system.

Although Nakajima may disclose converting image data from a Cartesian coordinate system into a polar coordinate system (Nakajima, col. 4, lns. 51-55, col. 5, lns. 30-35, col. 18, lns. 41-59), Nakajima does not teach or suggest a method that converts image data captured in a first, polar coordinate system into a second coordinate system, as recited in claim 32.

Dependent claim 34, which depends upon claim 32, is allowable for at least being dependent from an allowable independent claim, in addition to its own distinguishing features.

Accordingly, Applicants respectfully request that the rejections of these claims be removed and that these claims be passed to allowance.

Claims 38, 40, and 41

Claim 38 recites features that distinguish it from the applied reference. For example, claim 38 as amended recites a method for processing image data representing biometric data. Claim 38 further recites that the method comprises: capturing the image data in a first, polar coordinate system; and converting the captured image data in the first, polar coordinate system to converted image data in a second coordinate system.

While Nakajima may disclose converting image data from a Cartesian coordinate system into a polar coordinate system (Nakajima, col. 4, lns. 51-55, col. 5, lns. 30-35, col. 18, lns. 41-59), Nakajima does not teach or suggest a method that converts image data captured in a first, polar coordinate system into a second coordinate system, as recited in claim 38.

Dependent claims 40 and 41, which depend upon claim 38, are allowable for at least being dependent from an allowable independent claim, in addition to their own respective distinguishing features.

Accordingly, Applicants respectfully request that the rejections of these claims be removed and that these claims be passed to allowance.

Rejections under 35 U.S.C. § 103

On page 5 in paragraph 8 of the Office Action, claims 5, 9-11, 14-17, 27, 28, and 30 are rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Nakajima in view of U.S. Patent No. 5,528,355 to Maase *et al.* (“Maase”). On page 7 in paragraph 9 of the Office Action, claims 3, 4, 21, 22, 24, 25, 33, 34, and 39-41 are rejected as being

allegedly unpatentable over Nakajima in view of U.S. Patent No. 4,387,365 to Berry *et al.* (“Berry”). Applicants respectfully traverse for the reasons stated below.

Claims 9-14

Claims 9-14 recite features that distinguish from the applied references. For example, claim 9 as amended recites a system for processing image data representing biometric data, comprising: a substantially conical prism; a scanning imaging system optically coupled to the substantially conical prism for capturing the image data in a first coordinate system; and an image conversion system coupled to the scanning imaging system for converting the image data captured in the first coordinate system to converted image data in a second coordinate system.

On page 5 in paragraph 8 of the Office Action, the Examiner concedes that Nakajima is limited to a generic prism (Nakajima, FIG. 2), but states that Maase teaches using non-planar prism surface in a scanning imaging system. While Maase may disclose employing a non-planar platen to take palmprints (Maase, col. 3, lns. 48-51), Maase does not teach or suggest employing a *substantially conical prism* as recited in claim 9 as amended (Emphasis added). Maase is limited to platens or prisms with symmetrical construction (Maase, col. 5, lns. 56-58 and Figs. 4A-4C) with surface sections that are “substantially planar” (Maase, col. 5, lns. 64-65 and Fig. 4B) such that the angle between a palm and fingers placed on the platen surface is “approximately 15 degrees” (Maase, col. 6, lns. 2-6 and Fig. 4B). Maase’s substantially planar platen surface is designed to make contact with “relatively flat” heels of hands (Maase, col. 5, lns. 65-67) and does not teach or suggest the substantially conical prism recited in claim

9. Although Maase may disclose a non-planar platen wherein the highest point is approximately 1 inch higher than the rim (Maase, col. 6 lns. 26-33 and Fig. 4C), Maase does not teach or suggest a substantially conical prism, as recited in claim 9.

Nakajima and Maase lack any disclosure or teaching of scanning or capturing print images on a substantially conical prism, as recited in claim 9. Nakajima is limited to standard prisms and contains no teaching or disclosure of substantially conical prisms.

Thus, the applied references, taken singly or in the allegedly obvious combination, fail to teach or suggest the above features of claim 9 as amended. Therefore, the applied references cannot be used to establish a *prima facie* case of obviousness for this claim.

Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claim 9, and find it allowable over the applied references. Also, at least based on their respective dependencies to claim 9, claims 10-14 should be found allowable over the applied reference, as well as for their individual respective distinguishing features. Dependent claims 10-14, which depend upon independent claim 9, are allowable for at least being dependent from an allowable independent claim, in addition to their own respective distinguishing features. See *In Re Fine*, 837 F.2d 1071 (Fed. Cir. 1988) and M.P.E.P. § 2143.03. Accordingly, Applicants respectfully request this rejection be removed and that these claims be passed to allowance.

Claims 15-19

Claims 15-19 recite features that distinguish from the applied references. For example, claim 15 as amended recites a system for processing image data representing

biometric data comprising: a biometric imaging system comprising: a substantially conical prism, an scanning imaging system optically coupled to the substantially conical prism for capturing the image data in a first coordinate system, and a first image conversion system coupled to the scanning imaging system for generating and storing conversion data; and a second image conversion system coupled to the biometric imaging system for converting the image data captured in the first coordinate system to converted image data in a second coordinate system.

On page 5 of the Office Action, the Examiner concedes that Nakajima does not disclose a non-planar prism, but contends that Maase cures this deficiency. Applicants respectfully submit that Maase does not cure this deficiency of Nakajima because Maase does not teach or disclose a *substantially conical* prism, as recited in amended claim 15.

Dependent claims 16-19, which depend upon independent claim 15, are allowable for at least being dependent from an allowable independent claim, in addition to their own respective distinguishing features. Accordingly, Applicants respectfully request this rejection be removed and that these claims be passed to allowance.

Claims 3, 4, 21, 22, 24, 25, 27, 28, 30, 33, 34, and 39-41

On page 7 in paragraph 9 of the Office Action, claims 3, 4, 21, 22, 24, 25, 27, 28, 30, 33, 34, and 39-41 are rejected as being allegedly unpatentable over Nakajima in view of Berry.

Without conceding the propriety of this rejection, Applicants herein cancel claims 4, 22, 25, 33, and 39, thus obviating the rejection of these claims.

As discussed above, independent claim 1 as amended herein is distinguishable over the applied reference. Dependent claim 3, which depends upon independent claim 1, is allowable for at least being dependent from an allowable independent claim, in addition to its own distinguishing features.

As discussed above, independent claim 20 is distinguishable over the applied reference. As discussed above, amended independent claim 20 as amended is distinguishable over the applied reference. At least based on their respective dependencies to claim 20, claim 21 should be found allowable, as well as for its additional distinguishing features.

As discussed above, claim 23 is allowable over Nakajima. Claims 24, 27, 28, and 30, which depend upon independent claim 23, are allowable for at least being dependent from an allowable independent claim, in addition to their own respective distinguishing features.

As discussed above, claim 32 as amended herein is distinguishable over Nakajima. Claim 34, which depends upon independent claim 32, is allowable for at least being dependent from an allowable independent claim, in addition to its own distinguishing features.

As discussed above, claim 38 as amended is distinguishable over Nakajima. Claims 40 and 41, which depend upon independent claim 38, are allowable for at least being dependent from an allowable independent claim, in addition to their own respective distinguishing features.

Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejections of these claims, and find them allowable over the applied references.

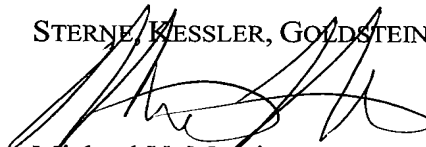
Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present Application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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Date: October 11, 2007

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